

**REMARKS/ARGUMENTS**

Claim 29 was amended so as to include the limitation of claim 45. Claim 45 is canceled. Claim 46 now depends from Claim 29.

New claims are added to the elected invention:

New claim 75 is supported by original claim 45 and page 34, lines 20-23.

New claim 76 is supported by original claims 46 and 50.

With respect to the amendment of specification,

"fumed silica" for AEROSIL 300 (Nippon Aerosil Co., Ltd.) cited in page 55, lines 6-11 of the present Specification is supported, for example, by as follows:

- i) Web site of "AEROSIL®":  
see attached "SHEET 1";
- ii) US 7534499: Col.9, lines 40-42,  
see attached "SHEET 2"; and
- iii) US 7348068: Col. 16, lines 4-8,  
see attached "SHEET 3".

1. Claims 29-30, 36-37, 43-46 and 48-49 are rejected under 35 U.S.C. 102(e) as being anticipated by Kawamura et al. (Pub. No.: US 2003/0068581).

2. Claims 31-33, 38-39 and 50-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawamura et al. (Pub. No.: US 2003/0068581).

3. Claims 34-35 are rejected under 35 USC 103(a) over Kawamura et al in view of Kim et al.

4. Claims 40-42 are rejected under 35 USC 103(a) over Kawamura et al in view of Hannah.

Claim 29 was amended so as to include the limitation of original claim 45. Original claim 45 is rejected as follows: "Kawamura shows the receptive layer 26 is porous (xylene solution is made of porous material)".

As for the Examiner's reasoning noted above concerning xylene solution, reconsideration is requested. Kawamura discloses in [0232] that "a xylene solution of semiconductor material fluorenebithiophene spin coated thereon to form a semiconductor layer 26".

As described above, disclosed is a "xylene solution of fluorenebithiophene" which should contain no particles, accordingly, the above Examiner's statement that "xylene solution is made of porous material" therefore is without disclosure to support the conclusion that the formed layer is porous. A further explanation is requested if this conclusion is maintained.

Further, the above xylene solution is used to form a "semiconductor layer 26" which does not correspond to the "receptive layer" of the present Application, because the "semiconductor layer 26" is formed over the electrical circuit (22 and 24 in Fig. 2) and no more electrical circuit is formed on the semiconductor layer 26 (in Fig. 2). Therefore, even if the Examiner's reasoning, questioned above is correct, the disclosure does not show or suggest the present invention.

No disclosure is found in Kawamura suggesting "a porous receptive layer".

In the present Application, the advantages of a "porous receptive layer" are described in page 21, lines 3-17 as follows:

i) Undesirable spread of conductive polymers is suppressed, whereby a detailed circuit pattern can be formed.

ii) Damage due to scratching can be minimized since the circuit pattern is impregnated into the receptive layer, whereby no protective layer is needed.

iii) A heat treatment process such as annealing is not necessary since durability of the circuit is enhanced by the porous receptive layer, whereby it is possible to quickly and simply produce an electrical circuit.

Such effects of the porous receptive layer of the present Application have not been disclosed by Kawamura. Therefore, not only is it not shown or suggested, there is no reason in the art to use a porous receptive layer.

Accordingly, claim 29 is patentable over the art and all the claims dependent on claim 29 should be allowed with it.

With respect to new claim 75, "alumina particles, pseudo boehmite particles, colloidal silica particles and fumed silica particles" are not disclosed by Kawamura.

Kawamura discloses inorganic particles, such as iron powder, graphite powder, brown iron oxide, lead oxide, silver oxide,

chromium oxide, iron sulfate, chromium sulfate ([0097]) and inorganic pigments ([0100]), as a light-heat conversion material, which can be contained in the pattern-forming layer or in an intermediate layer ([0096]).

The abovementioned "alumina particles, pseudo boehmite particles, colloidal silica particles and fumed silica particles" are not disclosed by Kawamura, because these particles cannot be used as a light-to-heat conversion material.

Accordingly, claim 75 is free of the cited art.

New claim 76 includes the limitation of claim 50, namely, "a weight ratio of the inorganic particles to the hydrophilic binder is between 2 : 1 and 20 : 1".

The Examiner states that paragraph [0294] of Kawamura discloses general ratio of inorganic particle, however, there is no disclosure of inorganic particle in paragraph [0294].

Styrene sodium sulfonate disclosed in paragraph [0294] is transformed into a polymer by irradiation of UV light, namely, polystyrene sodium sulfonate, accordingly, styrene sodium sulfonate is not an inorganic particle.

"Chromium" is deposited on a mask which is used when the support surface coated with styrene sodium sulfonate is irradiated with UV light in a patterned manner and is removed after the UV irradiation, accordingly, chromium is not contained in the hydrophilic pattern formed on the substrate.

Accordingly, paragraph [0294] of Kawamura discloses no inorganic particle.

As discussed above Kawamura discloses inorganic particles, such as iron powder, graphite powder, brown iron oxide, lead oxide, silver oxide, chromium oxide, iron sulfate, chromium sulfate ([0097]) and inorganic pigments ([0100]), as a light-heat conversion material, which can be contained in the pattern-forming layer or in an intermediate layer ([0096]).

However, it is disclosed in paragraph [0101] that the content of the dyes or pigments may be 0.01 to 50% in the pattern forming layer, intermediate layer or support substrate of Kawamura.

Accordingly, the content of inorganic particles contained in the layers of Kawamura is definitely lower than the claimed range of content of inorganic particles in the present Application,

namely, a weight ratio of the inorganic particles to the hydrophilic binder is between 2 : 1 (66.7% by weight) and 20 : 1 (95.2% by weight).

This is not surprising because the purpose to use inorganic particles is absolutely different in Kawamura and in the present Application. Namely, while the inorganic particles are used as a light-to-heat conversion material in Kawamura, the inorganic particles are used to form a porous layer in the present Application.

It is disclosed in the present Application that, when the weight ratio of the inorganic particles is less than 2:1 (66.7% by weight), it becomes difficult to obtain a sufficient pore volume (page 39, lines 10 - 13). On the contrary, Kawamura teaches away from the above weight ratio of the present Application as follows: "If this amount exceeds 50% by weight, the film strength of the layer containing the light-to-heat converting material becomes lower ([0101])."

Accordingly, new claim 76 is free of the art.

Combining the teaching of either Kim or Hannah does not change the above conclusions. They are concerned with the

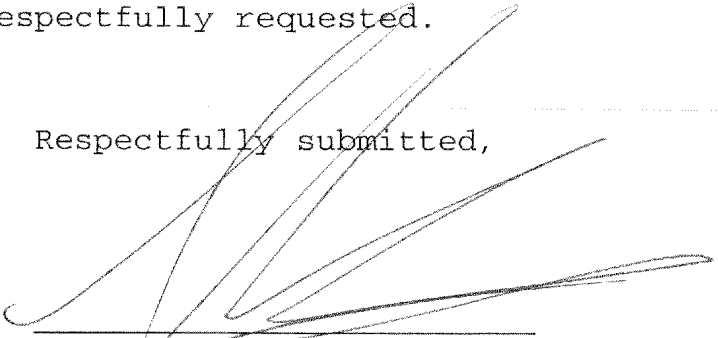
Appl. No. 10/528,961  
Reply to Office Action of April 14, 2009

conductive polymer solution and do not render the porous layer or its requirements, obvious when combined with Kawamura.

In view of the above, the rejections are avoided. Allowance of the application is therefore respectfully requested.

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**Encs. Petition for One Month Extension of Time and Fee  
Attachment Sheets 1-3  
Information Disclosure Statement and Fee  
Form PTO/SB/08A and publications listed thereon**



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Page 1 of 2

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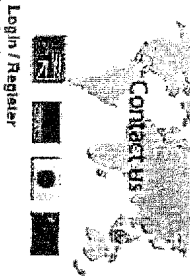
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Page 2 of 7

1 2 3 4 5 Next

16. Product

AERODISP® W 7622

AERODISP® W 7622 is a low-viscosity, water-based dispersion of AEROSIL® fumed silica with a slightly alkaline pH.

17. Product

AERODISP® W 341

AERODISP® W 341 is a colloidal dispersion with a high solid content. The small surface area and particle size of the dispersed mixed oxide make it ideal for applications where low binder demand and high slips are desired.

18. Product

AERODISP® W 7330

Aqueous dispersion of a fumed silica and a fumed mixed oxide with a high solids content and a positive zeta potential.

19. Product

AEROPERL® 300/30

AEROPERL® 300/30 is a specifically granulated hydrophobic fumed silica.

SHEET 1

As in Example 1, the cured physical results are shown in Table 1.

**SHEET 3**

US 7,348,068 B2

**16**

compound may  
oxide, and a  
used alone

In particular, organic solvent dispersed silica sol has excellent dispersibility, and also has excellent corrosion resistance in comparison to fumed silica.

le, without  
calcium as  
sulfonate, and  
containing cal-

Examples of the fumed silica include AEROSIL R971, AEROSIL R812, AEROSIL R811, AEROSIL R974, AEROSIL R202, AEROSIL R805, AEROSIL 130, AEROSIL 200, AEROSIL 300, and AEROSIL 300CF (trade names) produced by Nihon Aerosil Co., Ltd.